

Papillary Endothelial Hyperplasia of the Breast: A Case Report

Hyeon Sook Kim, MD¹, Eun Suk Cha, MD², Hyun Joo Choi, MD³

¹Department of Radiology, St. Paul's Hospital, College of Medicine, The Catholic University of Korea

²Department of Radiology, St. Vincent's Hospital, College of Medicine, The Catholic University of Korea

³Department of Pathology, St. Vincent's Hospital, College of Medicine, The Catholic University of Korea

Papillary endothelial hyperplasia (PEH) is a benign vascular proliferative process characterized by papillary proliferation of endothelial cells located within a vascular lumen. This entity is believed to be an unusual form of organizing vascular thrombus, occurring most commonly in the extremities and in the head and neck region.

Index words: Papillary endothelial hyperplasia, breast, vascular lesions

INTRODUCTION

Papillary endothelial hyperplasia (PEH) is a benign vascular proliferation and may occur in any location in the body. This entity is commonly occurring in the extremities and in the head and neck region, and most commonly located in the skin or the subcutaneous tissue (1, 2). We reported a case of PEH in the breast describing its mammographic, sonographic and pathologic findings.

CASE REPORT

A 33-year-old woman had an incidentally detected palpable mass in upper inner quadrant of right breast. She had no family history of breast cancer or breast injury. On physical examination, a soft, nontender nodule was palpated superficially in the right breast. There was no associated skin retraction or thickening or color change.

Digital mammography (Lorad Selenia; Hologic, Bedford, MA, U.S.A.) showed well circumscribed mass in upper inner quadrant of right breast (Fig. 1a). There was no associated calcifications within- and around the mass. Sonography was performed using 7.5 to 12-MHz linear-array transducer (iU22; Philips Medical Systems, Bothell, WA, U.S.A.), revealing a 0.8 × 0.5 cm sized lobulated hypoechoic nodule (Fig. 1b). This nodule was located in the subcutaneous layer. Color Doppler sonography showed increased vascularity at the periphery of the nodule (Fig. 1c). We considered this nodule as BI-RADS category 3 lesion on the basis of mammographic & sonographic findings but sonography-guided core biopsy was done because the patient wanted to. This nodule was histopathologically confirmed as intravascular papillary endothelial hyperplasia of the breast showing multiple irregular endothelial-lined papillary structures (Fig. 2).

DISCUSSION

Pure vascular lesions of the breast show a wide spectrum of appearances and clinical behaviour, and considered to have five categories: benign hemangioma, benign tumor with potentially suspicious morphology

Corresponding to: Eun Suk Cha, MD, Department of Radiology, St. Vincent's Hospital, College of Medicine, The Catholic University of Korea, 93-6 Ji-dong Paldal-gu, Suwon Gyeonggi-do 442-723, Korea.
Tel: 82-31-249-8495 Fax: 82-31-247-5713 E-mail: escha@catholic.ac.kr

(atypical hemangioma, PEH, angiomatosis, angiolymphoid hyperplasia with eosinophilia), low-grade malignant potential (hemangiopericytoma, epithelioid hemangioendothelioma), angiosarcoma and radiation-associated breast lesions (3). PEH is a reactive vascular lesion that was first described by Masson in 1923 reporting a peculiar intravascular papillary endothelial proliferation arising in a hemorrhoid (4, 5). PEH is usually associated with organizing thrombi which are considered to be unusual form of thrombus organization (4, 6, 7). It is thought that once the thrombus develops, it serves as a matrix for the ingrowth of papillary structures, characterized by anastomosing vascular channels with en-

dothelium-lined tufts and papilla-like formations (4). Subsequent obstruction of the luminal space of the vascular structures may lead to the enlargement of the mass lesion, necessitating differentiation from a neoplasm (1). Ultrastructurally, these papillary structures appear to closely resemble granulation tissue, which further suggests a reparative origin (6). PEH is classified into three subtypes: a pure form, in which the lesion arises in a dilated vessels; a mixed form, in which the lesion develops in a preexisting vascular proliferation such as hemangiomas, varices or arteriovenous malformations; and an extremely rare form that arises in hematomas (4, 6). Age at presentation is variable with

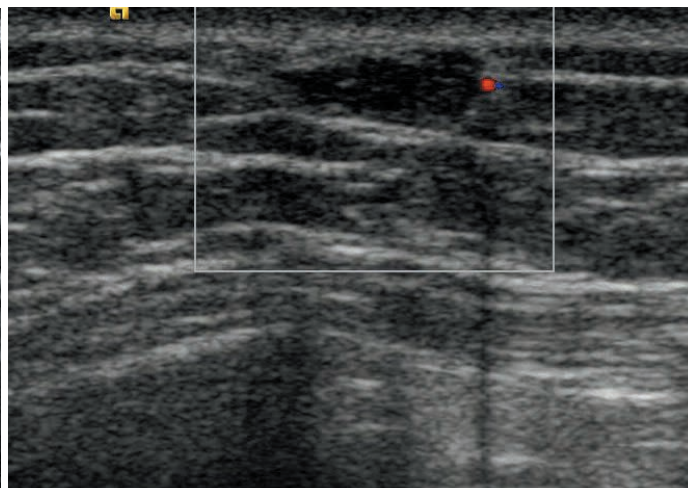
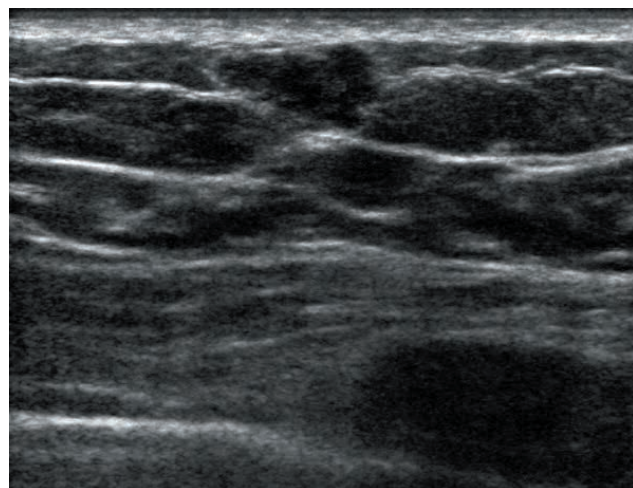


Fig. 1. A 33-year-old woman with PEH in the right breast.

a. Mediolateral oblique and craniocaudal mammograms show well-marginated radiopaque nodule in upper inner quadrant of right breast.

b. Sonogram shows an oval hypoechoic nodule (arrows) with circumscribed margin and parallel orientation at subcutaneous layer of the right breast.

c. On color Doppler sonography, increased vascularity was seen at the periphery of the nodule.



b

c

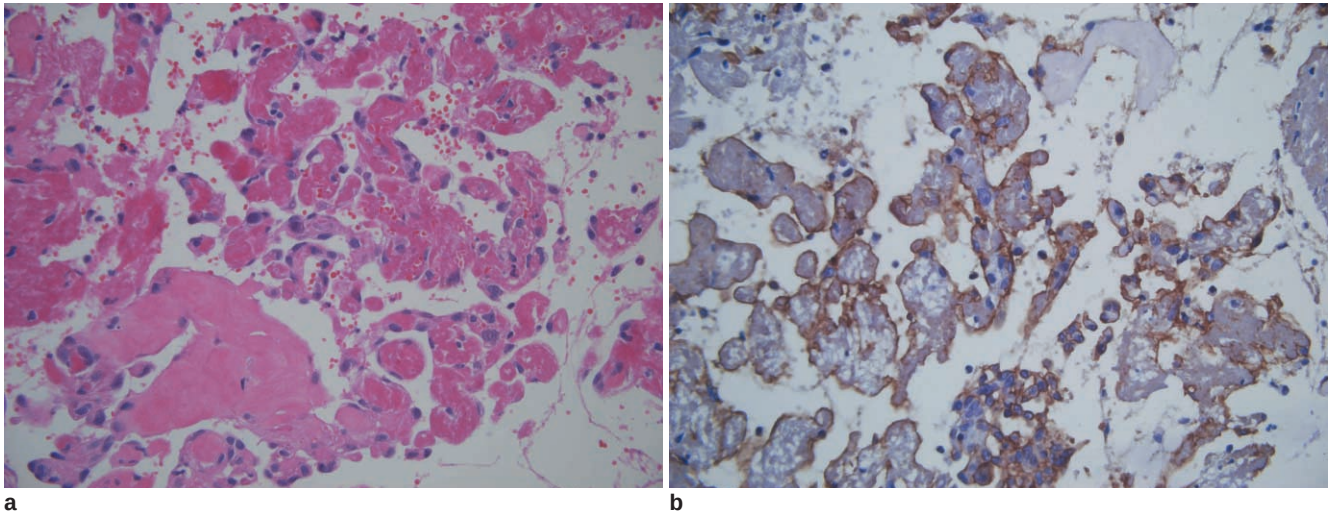


Fig. 2. Histological findings of the PEH.

a. Papillae are composed of a single layer of bland endothelial cells surrounding a hyaline cores (H-E, $\times 200$).

b. Immunostaining for CD34 ($\times 200$) is positive for endothelial cells of the papillary structure.

slightly more female tendency. A history trauma is uncommon (8). Histopathologically PEH is frequently confused with angiosarcoma although the vast majority of the PEH was located subcutaneous tissue of the breast in contrast to the angiosarcoma which was usually located in the deeper breast parenchyma.

In conclusion, when well circumscribed oval or lobular breast mass with superficial location is detected on mammography and/or sonography, PEH should be considered as a possible diagnosis.

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